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10/063,151	03/26/2002	Hemant S. Shah	201-0171 CLH	2725

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EXAMINER

MILLER, PATRICK L

ART UNIT PAPER NUMBER

2837

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/063,151

Applicant(s)

SHAH ET AL.

Examiner

Patrick Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14, 19-29 and 35 is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-18 and 30-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on 03/03/03. These drawings are acceptable.

Response to Arguments

2. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.
3. Applicant's arguments, see page 12 (lines 4-19), filed 03/03/03, with respect to claim 19 have been fully considered and are persuasive. The rejection of claims 19 and 20 has been withdrawn.
4. The indicated allowability of claim 17 is withdrawn in view of the newly discovered reference(s) to Yoshida et al (5,096,013). The Examiner regrets the initial indication of allowability of the aforementioned claim. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 6, 10, 12, 13, 17, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (JP-11-093670) in view of Yoshida et al (5,096,013).

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- With respect to claims 1, 17, Takeda discloses a system for noise reduction from an air-moving device comprising: a shroud (Fig. 2, #41) having an inner surface disposed around an area defining an airflow (Fig. 2, inner surface of #41); an outer barrel connected to the shroud (Fig. 3, #42), the outer barrel having inner and outer surfaces extending from the shroud inner surface (Fig. 2, inner surface of outer barrel from #41 extending to outer surface #42); an outer noise silencer comprising at least one hollow cavity that attenuates predetermined noise frequencies (Fig. 2, #46a-c); and the outer noise silencer connected to the airflow by an opening of predetermined sized through the outer barrel (Fig. 2, #49).
- Takeda does not disclose an inner noise silencer disposed in the airflow (claim 1) and an inner barrel with at least one noise silencer attached to the air-moving device (claim 17).
- Yoshida et al disclose an inner barrel (Fig. 4, #21 is barrel shaped) noise silencer disposed in the airflow (Fig. 4, #21, 22). The motivation to provide such is to reduce noise arising from fan operation (Col. 2, lines 1-3). This provides the advantage of sound absorption over a relatively wide frequency band (Col. 4, lines 47-49).
- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Takeda with an inner noise silencer, thereby providing the advantage of absorbing sound over a relatively wide frequency band, as taught by Yoshida et al.
- With respect to claims 2 and 3, Takeda discloses the outer noise silencers are attached to the shroud and outer barrel outer surface (Fig. 2, #46a-c attaches to both #41 and #42, respectively).

- With respect to claim 6, Takeda discloses the outer barrel extending upstream of the air-moving device (Fig. 1, #4 upstream from #1).
 - With respect to claims 10 and 32, Takeda discloses that the dimensions of the silencer can be built to attenuate resonant frequencies. This implies that a narrow band of frequencies (resonant frequency and frequencies close to resonant frequency) are attenuated [0015].
 - With respect to claims 12 and 13, Takeda discloses the outer noise silencers in series (parallel to airflow) and parallel (perpendicular to airflow) (Fig. 2, #46a-c arranged in series; Fig. 3, #49 arranged in parallel).
6. Claims 4, 9, 11, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda and Yoshida et al as applied to claims 1 and 17 above, and further in view of Ngo (6,244,817).
- Takeda and Yoshida et al do not disclose stator members attached on the outer barrel inner surface (claim 4), the noise silencer is a broadband silencer (claims 9 and 31), and the noise silencer comprises both narrowband and broadband application (claims 11 and 33).
 - Ngo discloses a stator attached to the outer barrel (Fig. 1, #308), the noise silencer is a broadband silencer, and the noise silencer comprises both narrowband and broadband application (Abstract). The motivation to provide such is to control backpressure (stator) (Col. 4, lines 8-14) and control broadband and narrowband noise components (Col. 2, lines 30-32 and 49-58). This provides the advantage of inhibiting flow in the upstream direction and inhibiting two types of noise, respectively.

- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Takeda and Yoshida et al as described above, thereby providing the advantage of inhibiting upstream flow and inhibiting two types of noise, as taught by Ngo.
7. Claims 5, 7, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda and Yoshida et al as applied to claim 1 above, and further in view of Ritenour (4,692,091).
- Takeda and Yoshida et al do not disclose outer barrel extending downstream and both upstream and downstream of the air-moving device (claims 5 and 7) and, the cavity further comprising a sound absorbing material made of steel wool (claims 15 and 16).
 - Ritenour discloses an outer barrel that is located both upstream and downstream of the air-moving device (Fig. 1, #4 located upstream and downstream of #9) and a fibrous and metallic material (steel wool) that is used as a filler material inside a sound cell. The motivation for such is to provide the advantage of further damping noise and vibration (Col. 3, lines 13-19).
 - Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Takeda and Yoshida et al so the outer barrel is both upstream and downstream of the air-moving device and so the cavities further comprise steel wool sound absorbing material, thereby providing the advantage of further damping noise and vibration, as taught by Ritenour.

8. Claims 8 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda and Yoshida et al as applied to claims 1 and 17 above, and further in view of Periyathamby et al (6,309,176) [listed on IDS of first office action].
- Takeda and Yoshida et al do not disclose the outer noise silencer being a Helmholtz resonator.
 - Periyathamby et al disclose an outer noise silencer being a Helmholtz resonator (Fig. 3). The motivation to make the outer noise silencers Helmholtz resonators is because Helmholtz resonators can be tuned to the blade passing tone of the fan. This provides the advantage of reducing said passing tone (Col. 1, lines 40-41).
 - Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Takeda and Yoshida et al so the outer noise silencers are Helmholtz resonators, thereby providing the advantage of reducing passing blade passing tone, as taught by Periyathamby.
9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda and Yoshida et al as applied to claim 1 above, and further in view of Takeshita (6,390,770) [listed on IDS of first office action].
- Takeda and Yoshida et al do not disclose the outer noise silencer comprising a pipe disposed between the opening through the outer barrel and the hollow cavity.
 - Takeshita disclose a pipe-like portion that is disposed between the opening in the outer barrel and the hollow cavity (Fig. 8, small pipe portion between 10b and 40A). The motivation to provide such is so portion 40A can be fitted to portion 10b. This provides the advantage of being able to interchange part 40A for a part seen in Figure 4 (40A) or

Figure 15 (40C). This provides the advantage of sizing the damping means for specific space restrictions.

- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Takeda and Yoshida et al with a pipe as disclosed above, thereby providing the advantage of sizing the damping means for specific space restrictions, as taught by Takeshita.

10. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (JP-11-093670) in view of Takeshita (6,390,770) [listed on IDS of first office action].

- Takeda discloses a system for noise reduction from an air-moving device comprising: a shroud (Fig. 2, #41) having an inner surface disposed around an area defining an airflow (Fig. 2, inner surface of #41); a generally cylindrical outer barrel connected to the shroud (Fig. 3, #42), the outer barrel having inner and outer surfaces extending from the shroud inner surface (Fig. 2, inner surface of outer barrel from #41 extending to outer surface #42); a noise silencer (Fig. 2, #46a-c) connected to the airflow by an opening of predetermined sized through the outer barrel (Fig. 2, #49).
- Takeda does not disclose a pipe extending radially between the opening through the outer barrel and the hollow cavity.
- Takeshita disclose a pipe-like portion that is disposed between the opening in the outer barrel and the hollow cavity (Fig. 8, small pipe portion between 10b and 40A). The motivation to provide such is so portion 40A can be fitted to portion 10b. This provides the advantage of being able to interchange part 40A for a part seen in Figure 4 (40A) or

Figure 15 (40C). This provides the advantage of sizing the damping means for specific space restrictions.

- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Takeda with a pipe as disclosed above, thereby providing the advantage of sizing the damping means for specific space restrictions, as taught by Takeshita.

Allowable Subject Matter

11. Claims 14, 19-29, and 35 are allowed.

12. The following is a statement of reasons for the indication of allowable subject matter:

- With respect to claim 14, the Prior Art does not disclose a system for noise reduction for a plurality of fans, where each fan has an outer barrel.
- With respect to claim 19, the Prior Art does not disclose resonating an air plug in combination with a fan shroud having an outer barrel.
- With respect to claim 21, the Prior Art discloses pipes extending between the opening through the outer barrel and the hollow cavity, but does not disclose the pipes being generally spiral.
- With respect to claim 35, the Prior Art discloses pipes extending between the opening through the outer barrel and the hollow cavity, but does not disclose the pipes extending parallel to the airflow.

Prior Art of Record

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Sakamoto (JP-07011956) discloses a noise-absorbing member that is located in the airflow path (inner noise silencer).
- Tachika (JP-08136004) discloses a fan shroud with a fan guard that is in the airflow path and attenuates noise (inner noise silencer).
- Nishiyama et al (2002/0015640) disclose a noise reduction mechanism of a fan device with an inner noise silencer (Fig. 1, #41).
- Hersch et al (4,596,921) disclose a shroud with a Helmholtz resonator.
- Nakamura (JP-2001-317358) discloses a resonator integral fan shroud.
- Yasuki (JP-08158968) discloses a fan shroud with two hollow bodies.
- Iwatsuki et al (JP 08114120) discloses a fan shroud with a resonator.

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Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Miller whose telephone number is 703-308-4931. The examiner can normally be reached on 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on 703-308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Patrick Miller
Examiner
Art Unit 2837

pm
May 16, 2003


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